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FEDERAL COMMUNICATIONS COMMISSION
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October 30, 1998

Ms. Magalie Roman Salas
Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

EX PARTE PRESENTATION

Re: *In the Matter of Telephone Number Portability, CC Docket No. 95-116*

Dear Ms. Salas:

On October 28, 1998, Nancy Reitman, Timothy Tardiff, and the undersigned representing SBC met with Kris Monteith, Jay Atkinson, Chris Barnekov, Lloyd Collier, Ana Ganckson-Curtis, Rhonda Lien, Josephine Simmons, and Lenworth Smith representing the Competitive Pricing Division of the Common Carrier Bureau to discuss issues in the above referenced docket.

The SBC representatives presented a paper, authored by Alfred Kahn and Timothy Tardiff, that discusses the measurement and recovery of the costs of long term number portability (copy attached). The SBC representatives also presented fully distributed cost results that contrast the proposed query and end user charge rates with their fully distributed costs (copy attached).

Please include this letter in the record of these proceedings in accordance with Section 1.1206(a)(2) of the Commission's Rules.

Acknowledgment and date of receipt of this transmittal are requested. A duplicate transmittal letter is attached for that purpose.

Please contact the undersigned should you have any questions.

Respectfully submitted,

Attachments

No. of Copies rec'd 0 + 2
List ABOVE

Cc: Kris Monteith
Jay Atkinson
Chris Barnekov
Lloyd Collier
Ana Ganckson-Curtis
Rhonda Lien
Josephine Simmon
Lenworth Smith

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Measuring and Recovering the Costs of Long-Term Number Portability

By

Alfred E. Kahn and Timothy J. Tardiff

October 28, 1998

I. INTRODUCTION

The purpose of this paper is to evaluate from an economic perspective the provisions for recovery of the costs of long-term number portability (LNP) contained in the FCC's Third Report and Order.¹ We do so on both practical and theoretical grounds.

The FCC defines three types of costs that might be associated with LNP: (1) costs that are shared by the industry in providing for a third-party administrator,² (2) carrier-specific costs directly related to the provision of number portability,³ and (3) carrier-specific costs not directly related to it.

Costs in the first category will be recovered through assessments to target carriers, and as such become equivalent to carrier-specific direct costs. For the other two categories, the order appears to limit recovery to direct costs only, unless incumbent local exchange carriers (ILECs) can meet what appears to be a heavy burden of proof that costs measured as indirect (type 3) are actually incremental to the provision of LNP. The order discusses two such situations. First, in observing that network upgrades that provide LNP capability could also benefit other services, the FCC states: "we will also consider as carrier-specific costs directly

¹ In the Matter of Telephone Number Portability, Third Report and Order, CC Docket No. 95-116, May 12, 1998 ("Third Report and Order")

² Para. 69. The Commission's use of the term "shared cost" differs from the definition used in other contexts: shared costs are sometimes defined to be those costs incurred in the provision of two or more services (but fewer than the firm's total number) that are not incremental to any single one of them.

³ Para. 72. The order provides as examples costs incurred in querying of calls and the porting of telephone numbers from one carrier to another.

related to the provision of number portability that portion of a carrier's joint costs that is demonstrably an incremental cost carriers incur in the provision of long-term number portability."⁴ Second, the order rules out the use of general overhead factors and specifies that "carriers may identify as carrier-specific costs directly related to providing long-term number portability only those incremental overheads that they can demonstrate they incurred specifically in the provision of long-term number portability."⁵

In sum, the FCC's order seem to limit ILECs' charges for LNP to the direct costs that they can conclusively demonstrate are incremental to its provision. As we demonstrate more fully below, such charges would be economically inefficient to the extent (1) truly incremental costs are excluded because of the impracticality of measuring and attributing costs typically categorized as "overheads" or "common" costs and (2) the firm's prices must exceed bare incremental cost because of scale and scope economies in the production of multiple outputs.

The FCC's prescriptions here in its Third Report and Order also differ from the approach it articulated in its 1996 Interconnection Order. That order specified that the ILEC's

prices...shall recover the forward-looking costs directly attributable to the specific element, as well as a reasonable allocation of forward-looking common costs...Directly attributable forward-looking costs also include the incremental costs of shared facilities and operations. Those costs should be attributed to specific elements to the greatest extent possible...More broadly, certain shared costs that have conventionally been treated as common costs (or overheads) shall be attributed to the individual elements to the greatest extent possible.⁶

In short, while the current order seems to imply that recovery of costs beyond conclusively demonstrated incremental costs will be an exception, the Interconnection Order mandated full recovery of all forward-looking costs as a general rule.

⁴ Para. 73. The FCC's use of the term "joint costs" seems to differ from the definition it has used elsewhere. For example, in the 1996 Interconnection Order, joint costs were defined as "costs incurred when two or more outputs are produced in fixed proportion by the same production process" (para. 676). This latter definition is consistent with how economists generally defined joint costs. See, for example, Alfred E. Kahn, *The Economics of Regulation*: Cambridge: MIT, 1988, Volume I, p. 79. The FCC's definition here appears to encompass all such costs incurred in using the same process to produce multiple outputs.

⁵ Para. 74.

⁶ Para. 682.

II. COSTS TYPICALLY TREATED AS OVERHEADS

As a general matter, the costs of interest here are the difference between a firm's measured direct costs and its total costs. This residual can consist of two types. First, the FCC's interconnection order⁷ and the paper submitted by Dr. Debra Aron on behalf of Ameritech⁸ earlier in this proceeding both suggest that a portion of them, perhaps a substantial portion, while truly incremental to particular services, can not be measured with sufficient precision to be assignable practicably to those services. The issue here becomes whether in the absence of definitive measurement and attribution, a mark-up of zero is preferable to the kind of mark-up the FCC specifically authorized in its Interconnection Order and has traditionally employed elsewhere.

The second category captured in the residual are costs economists and the FCC have previously defined as common.⁹ Economic efficiency requires that they be recovered in the prices for outputs that share them. Moreover, there is no economic basis for exempting any particular service, such as LNP, from sharing in that recovery, unless the demand for it is perfectly elastic.¹⁰ Such an exemption could well be less efficient than a non-zero assignment to LNP and could also distort competitive outcomes.

III. ECONOMIC ANALYSIS

In this section we articulate the economic principles that apply to the analysis of the costs of local number portability. The problem has the following features.

- Public policy has dictated that carriers be capable of providing telephone number portability.

⁷ Para. 682.

⁸ Debra J. Aron, "Proper Recovery of Incremental Overheads for Local Number Portability," Ameritech Further Comments, CC Docket No. 95-116, August 3, 1998, Appendix B.

⁹ The FCC's Interconnection Order, para. 676 states that "the term 'common costs' refers to costs that are incurred in connection with the production of multiple products or services, and remains (sic) unchanged as the relative proportion of those products or services varies."

¹⁰ Indeed, the FCC's interconnection order called for attribution of such costs. For example, in the case of costs shared between transport facilities and local loops, the order specified that: "the costs of conduits shared by both transport and local loops...shall be attributed to specific elements in reasonable proportions." (Para. 682)

- That capability will be competitively provided—i.e., it is not a function that is to be provided only by ILECs.¹¹
- Only ILECs, however, are to be subject to regulatory limitations on their charges for the service.

In these circumstances, the measurement and recovery of LNP costs should be guided by the following principles:

- The costs to be recovered should be the costs of the network that actually provides LNP, along with other services and functions.
- The charges for LNP should recover *at least* the incremental cost imposed on the system by the provision of that service. Conversely, other services should not recover any of the incremental costs imposed by it.
- Costs shared between LNP and other network services, as well as common costs, should be recovered through efficient mark-ups over their respective incremental costs.
- Regulatory restrictions on LNP charges of the ILECs should not distort competition between them and other providers of that service.

A. The costs to be recovered should be those of the network that actually provides LNP, along with other services and functions

In some ways, the mandate to add number portability capabilities to the networks resembles what one of us once described as a collective consumption decision.¹² That decision calls for a network capable of offering a variety of telecommunications services along with number portability. Efficient prices should be based on the cost structure of *that* network.¹³

¹¹ This condition is described in para. 71 of the FCC's Third Report and Order: "the N-1 carrier will incur all querying costs individually...either by querying its own copy of data downloaded from the regional databases, or by arranging for the querying of such a database copy maintained by another carrier or a third party."

¹² Alfred E. Kahn and William B. Shew, "Current Issues in Telecommunications Regulation: Pricing," *Yale Journal on Regulation*, Vol. 4, 1987.

¹³ To illustrate this point, one of us rejected claims that "the telephone companies are attempting illegitimately to load on to POTS customers a portion of the costs of upgrading their non-traffic-sensitive access networks in order to offer various sophisticated services. The first question is *whether those investments are economically efficient*, minimizing the combined costs of access, calling, and the newer services; and in this assessment it is necessary to take into account the sufficiency of the incremental net revenues flowing from the services the investments make it possible to offer. If the expenditures are efficient—that is, if they conduce to efficient design of the entire system—then the marginal costs of the several services at which their prices should be set are their marginal costs under that system. Specifically, if the efficient system entails a higher proportion of NTS subscriber plant costs than some other design, the economically first-best flat rates to POTS customers will

The relevance of this principle to the present problem is that the LNP mandate may well cause a change in the cost structure of the efficient multi-purpose network.¹⁴ In particular, we are interested in whether addition of the LNP capability has increased the amount of shared and/or common costs as the firm's economies of scale and scope increase. Denying the ILEC any recovery of such increased overhead costs would necessarily cause it to fall short of recovering its total costs.

B. LNP charges should recover *at least* the incremental cost imposed on the system by the provision of that service

In para. 74 of the Third Report and Order the Commission concedes the principle that number portability can entail truly incremental overhead or common costs. The issue, therefore, is simply one of the feasibility of the company's identifying and measuring them and of the Commission's proper course with respect to costs that cannot be explicitly measured. Dr. Debra Aron says, persuasively, that accounting specifically for all of them—i.e., identifying and measuring them—would be a “ludicrously massive undertaking.”¹⁵

In these circumstances the Commission, having conceded the principle, has only two choices—to use some plausible proxy loading factor that accounts for those costs (and a reasonable portion of shared and common costs) or to allow none of them. The clear implication of its Order is that it will in those circumstances take the second course. Intellectual honesty, as well as simple fairness, requires that it ask itself the question, in this event: is zero its *best estimate* of the likely amount?

reflect those higher costs: The marginal costs of access are what they are in the system that is optimally designed to satisfy all demands it serves.” Ibid., p. 228 (emphasis in original)

¹⁴ The previously cited para. 74 of the Third Report and Order suggests such a cost change when it mentions the possibility that the investments to provide LNP capability might benefit other services. One way that this could occur would be if the new cost structure had greater costs shared between LNP and other services but lower (separate) incremental costs for some of those services.

¹⁵ Aron, *op. cit.* One of us commented on the difficulty of cost measurement as a general practical matter. “It is often infeasible, or prohibitively expensive, for businesses to make the necessary fine calculations of marginal cost for each of their numerous categories of services.” Kahn, *op. cit.* pp. 83-84. It would seem that such difficulties are even greater for a service or function, such as LNP that is enormously complicated, pervasive in its consequences, and that has never been offered before.

It has already answered that question in the negative. In these circumstances, it is logically compelled to accept a reasonable proxy, presumably some allocator that it has accepted in analogous circumstances.¹⁶

Our advocacy of an “allocator” in these circumstances might appear to conflict with fundamental economic principles that we have espoused on numerous past occasions. One of us (Kahn) has strenuously criticized regulators using cost allocations that do not even purport to describe a *causal* relationship between the provision of a particular service and the incurrence of costs: “cost” has no meaning except in terms of such a causal relationship. Where, however, as in the present instance, the “allocation” represents, in the Commission’s judgment, the most reasonable way of approximating a conceded causal relationship, it in no way conflicts with the sound economic principle—embraced also in the Commission’s Order—that—setting aside considerations of overall revenue adequacy—services be made to recover the incremental costs for which their offer is causally responsible. On the contrary, it represents the best available method of producing that result, in circumstances in which a refusal to apply such an allocator would be justified only by a judgment or belief that the conceptually correct value is zero.¹⁷

¹⁶ Allocators used in analogous circumstances account for both overhead costs that might in principle be truly incremental to the service in question as well as recovery of common costs and costs shared with other services. Because both types of cost are properly recovered in prices, it is not critical that the truly incremental costs be distinguished from the shared and common costs recovered in this way. The use of an allocator in these circumstances does not imply that the incremental cost of LNP includes all of the costs embraced by it.

¹⁷ As one of us noted earlier: “The cost allocation formulae actually employed may achieve only a rough, rule-of-thumb approximation to the actual costs for which each product or service is responsible, but those costs have objective reality.” Kahn, *op. cit.*, p. 78.

C. Costs shared between LNP and other network services should be recovered through efficient mark-ups over incremental costs

In the presence of shared and common costs, the proposition that prices must exceed incremental cost is unexceptionable.¹⁸ The economic issue here is whether a particular set of mark-ups to recover such costs is more efficient than the alternatives. It is by now widely recognized that *efficient* markups would, as a general proposition, vary inversely with the elasticities of the demands for the several services: this will minimize the inefficiencies consequent on the necessity to set prices above marginal cost. The Commission's apparent ban on a mark-up here in establishing the LNP charge—let alone a markup reflecting the relative inelasticity of demand for that service—would necessitate an inefficiently *large* markup on the other (for the most part, more price-elastic) services.

The relative elasticities of demand apparently call for a markup in the charge for LNP well in excess of zero. As we understand it, one of the proposed recovery mechanisms would take the form of a per customer assessment on all subscribers,¹⁹ *whether or not* they decide to shift their patronage to a CLEC or remain with the ILEC—an arrangement of which we approve, because presumably the benefits of competition accrue to all subscribers and the costs of ensuring those benefits should therefore not be imposed only on the customers who shift. The demand for the LNP service would in this event be very insensitive to its price. Exempting this charge from any recovery of common costs would therefore inefficiently shift the recovery of these costs to other, more elastic services.

In its apparent disallowance of any recovery of truly common costs in the LNP charge, the FCC's concern seems to be that the firm is already incurring them and recovering them in the prices for its existing services—in which event (it apparently believes) including a mark-up

¹⁸ As the FCC explains in its Interconnection Order (at para. 694): "Given these common costs, setting the price of each discrete network element based solely on the forward-looking incremental costs directly attributable to the production of individual elements will not recover the total forward-looking costs of operating the wholesale network."

¹⁹ Carriers would also charge other carriers for their use of query services. Because ILECs will not be the only providers of these services (carriers can self-provision or obtain services from third-party providers), these services will be competitive, and in these circumstances it ought to be market conditions, not FCC restraints on the ILECs alone, that dictate the efficient mark-up in their prices for recovery of common costs.

in the prices for LNP would permit over-recovery.²⁰ Its concern over double recovery here seems inconsistent with its decision in its August 1996 Interconnection Order to permit a mark-up in the charges for unbundled network elements toward the recovery of common costs. While it may be argued that the purchase of unbundled elements would displace retail sales by ILECs, so that there would be no double recovery, the same possibility exists in the case of LNP: its availability is intended to make local competition more attractive, as a result of which some of the ILEC sales that currently provide for recovery of common costs would be lost to CLECs. There is a further asymmetry between the treatment of UNEs, in general, which are priced to recover a mark-up, and the new network functionality of data base queries, which may be excluded from recovering a mark-up under the FCC's present approach.

D. Regulatory restrictions on LNP charges should not distort competition between ILECs and other providers

The FCC's restrictions on the ability of ILECs to charge for LNP, in the absence of symmetrical restrictions for CLECs, can distort competition (1) for final customers and (2) among suppliers of LNP capabilities.

As for the former, Dr. Aron presents a cogent example of how,²¹ in the presence of differing customer preferences for LNP charges and basic monthly charges, the restriction on the LNP charge by the ILECs could artificially tilt customer preferences towards CLECs,²² even if the total of the two charges, both of them on a per customer basis, were identical. In particular, if customers are more sensitive to the basic charge than the LNP charge, the CLEC could offer a lower basic charge and recover more of its cost through its (unrestricted) LNP charge.²³ Thus, not only would the ILEC be harmed by under-recovery of LNP costs (to the

²⁰ Third Report and Order, para. 74.

²¹ Aron, *op. cit.*, pp. 18-19. The end-user charge will be applied for a fixed period not to exceed 60 months. Therefore, the distortion to competition described here would occur only during the period when the charge is in effect.

²² Such customer preferences for particular price structures are a very real phenomenon in telecommunications. For example, residential subscribers have long preferred the certainty and convenience of flat rate local calling, even when available measured rate plans could provide substantial savings to a majority.

²³ For example, Dr. Aron suggests that local exchange carriers may compete by advertising their basic local rates, thus making customers more sensitive to these rates than the presumably less prominent LNP charge. In this

extent that truly direct costs are excluded by the use of a zero mark-up); it would suffer an artificial erosion of market share as well.²⁴

LNP functionality itself will be a competitive service. That is, firms can choose to self-supply or purchase LNP functionality from other carriers and/or third parties. Given the fact that the service is to be both competitive and new, regulatorily-imposed prices restricting any competitor are unnecessary and would distort competition. For example, if a market-based price for LNP functionality provided by a multi-service firm included some mark-up to recover common costs, artificially restricting ILECs' rates to include no such mark-up would distort competition in two ways. First, as we have already pointed out, the prices of other ILEC services would have to be higher than the competitive level, thereby reducing the ILEC's sales and inhibiting its ability to recover its total costs in the process. Second, the suppressed charges for the LNP services would shift demand toward the ILEC's LNP offerings and artificially discourage competition in the offer of this functionality.

IV. CONCLUSION

The Commission has defined three categories of costs associated with the provision of LNP capabilities and apparently decided that only the costs directly caused by LNP—i.e., incremental costs—should be included in the charges for those services. These direct costs include “incremental overheads” incurred as the result of offering LNP capabilities, but the FCC has apparently decided to permit their recovery only to the extent their qualification as part of incremental LNP costs can be conclusively demonstrated.

The Commission's position excludes costs that are shared between LNP and other services as well as the firm's common costs. This exclusion departs both from the economic principles we have reviewed here as well as past Commission positions. In particular, the Commission has provided for the recovery of reasonable proportions of these shared/common

case a CLEC offering a lower basic rate but a higher LNP charge could appear more attractive than an ILEC offering a lower regulated LNP charge but a higher local rate.

²⁴ As we have previously observed, erosions of market share, both efficient and artificially induced, undermine the FCC's apparent premise that current prices already recover all the ILEC's overheads and that a mark-up would therefore result in over-recovery of these costs.

costs in its definition of economic costs associated with the provision of unbundled network elements.

The use of the “reasonable allocators” established in these earlier cost exercises is superior to the denial of any recovery of shared and common costs that the Commission position entails. These allocators provide a practical basis for including both (1) costs classified as overheads that may be truly incremental to LNP but fail to satisfy the requirement of conclusive demonstration and (2) an efficient recovery of the costs shared by LNP and other network services. The FCC’s evidently intended exclusion of all such recoveries in the charges for LNP functionality will be both inefficient and distortive of competition both in the providing of LNP services themselves and in the sale of telecommunications services generally.